

REMARKS

On page 2 of the Office Action the Examiner rejected Claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over WO 95/20038 (U.S. equivalent: U.S. Patent No. 6,692,786 (herein after Denk et al.)) in view of U.S. Patent No. 6,139,724 (hereinafter Strohm et al). This is the only rejection in the Office Action.

Reconsideration is respectfully requested.

In response to the rejection, Applicants have amended claim 1 to recite that the filtrate pressures and backflusing pressure are created and maintained by use of two separate pumps on either side of the filter module and that the backflushing valve is opened between 100 and 700 ms. Support for these amendments can be found in the specification as originally filed and in the claims as originally filed, specifically at least at, Figure 2, and original claims 3 and 6-7. Claims 6 and 7 have been cancelled. Also, amendments have been made to remove abbreviations for minutes and seconds. No new matter has been added.

Denk et al. discloses a beer clarification process by crossflow microfiltration. The transmembrane pressure is controlled in the Denk et al. device by gas cushions G1 and G2 and a complex gas regulation scheme. (*See* Denk at col. 8, lines 40-45). The Denk et al. reference discloses a system where the pressure is applied over a storage tank (1) on one side of the system and over a collection tank (5) on the opposite side of the system (see Fig. 1, and col. 5, lines 31-37). This is entirely contrary to the present claimed invention, which is to provide a simplified and cost-effective beverage filtration system. Additionally, the backwashing described in the Denk et al. reference occurs over periods of minutes or hours (see Fig. 3, and col. 6, lines 11-51).

The Denk et al. reference does not disclose (1) the backflush pump located on the filtrate side of the filter module; (2) filtrate pressure being controlled by two pumps or (3) a backflushing time period of milliseconds; as recited in the amended claims of the present application. While Denk et al. does refer to a pump on the feed/retentate side, this teaching does not render obvious the specific use of pumps on both sides of the filter to create the specific pressure differences at specific points in the crossflow filtration device recited in the amended claims of the present application. In configuring the

system in the manner claimed, applicants unexpectedly have found a cost effective system for beverage filtering.

As shown (and claimed) in Figure 1 of the present application, the inclusion of the pumps on both sides of the filter enables a more efficient system to be obtained, without the separate chemical and backflushing systems of the prior art. In the present invention, the backflush pump is suitable for handling both the backflushing and hot water/cold water/chemical cleaning expedients. The process of Denk, which does not teach or suggest the inclusion of a backflush pump, could not effect such a simplified system and, in effect, by teaching the separate systems, teaches away from the present claimed invention.

Moreover, the Denk et al. reference does not disclose repeating of steps a and b as recited in claim 1 “until the filtrate flow goes below the lower predetermined limit value” (step c). Specifically, there is no disclosure of predetermined limit values in the Denk et al. reference.

The Denk et al. reference does not disclose “forcing out the water from the filter module (2) with filtrate” (step i). The filtration device in Denk et al. is cleaned using water and CO₂. (See col. 7, lines 14 to 35).

Also, nowhere in the The Denk et al. reference is there a disclosure even remotely related to the recitation that the offset value (offset_n) can be calculated in accordance with the formula as set forth in Claim 11. Further, the Examiner cannot simply state that this is an “optimization”.

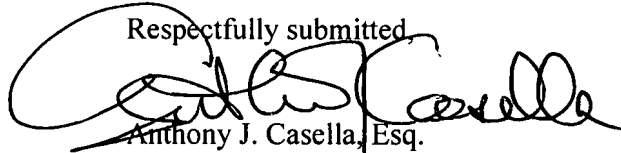
As a secondary reference, the Examiner cited to Strohm et al. because it contains teachings related to NaOH and KOH and well as the use of CO₂. These teaching do nothing to alleviate the fact that the Examiner has not recited support for the obviousness of each and every element of claim 1 of the present application. At most the Strohm et al. reference may be relevant to dependent claims 12 and 16 (which are ultimately dependent on claim 1). However, since the cited prior art does not provide evidence of the obviousness of claim 1, Strohm et al. in combination with Denk et al. cannot render claims 12 and 16 obvious. Still further, neither Denk et al nor Strohm et al teach the use of a cold water/hot water/zip line cleaning system.

Therefore, based on the above amendments and remarks, Applicants request that the above 103(a) rejection be withdrawn.

Based upon the above amendments and remarks, Applicants respectfully submit that amended claims 1-5 and 8-20 and are allowable over the prior art and that the present application is in proper form for allowance.

Favorable consideration and early allowance is respectfully requested and earnestly solicited.

Respectfully submitted,



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